GLOSSARY

-A-

AVAILABILITY, INHERENT (A_i). The instantaneous probability that a component will be up. Ai considers only downtime for repair due to failures. No logistics delay time, preventative maintenance, etc. is included.

AVAILABILITY, OPERATIONAL (A_0). Ao is the instantaneous probability that a component will be up but differs from inherent availability in that it includes ALL downtime. Included is downtime for both corrective maintenance and preventative maintenance, including any logistics delay time

-C-

CORRECTIVE MAINTENANCE (CM): All actions performed as a result of failure, to restore an item to a specified condition. Corrective maintenance can include any or all of the following steps: Localization, Isolation, Disassembly, Interchange, Reassembly, Alignment and Checkout.

-D-

DOWNTIME: That element of time during which an item is in an operational inventory but is not in condition to perform its required function.

-F-

FAILURE (f). The termination of the ability of a component or system to perform a required function.

FAILURE RATE (λ): The mean (arithmetic average, also known as the forced outage rate) number of failures of a component and/or system per unit exposure time. The most common unit in reliability analyses is hours (h).However, some industries use failures per year (f/y) which is denoted by the symbol (λy).

-H-

HOURS DOWN TIME PER YEAR (Hrdt/Year). Average hours the item is expected to be not functional in a one year period, caused by both preventative maintenance and failures. This includes any logistics delay time.

-L-

LOGISTIC DELAY TIME: That element of downtime during which no maintenance is being accomplished on the item because of either supply or administrative delay.

-M-

MAINTENANCE: All actions necessary for retaining an item in or restoring it to a specified condition.

MAINTENANCE DOWN TIME (Mdt). The total downtime for preventative maintenance (including logistics delay time, which includes spare parts availability, crew availability, etc) for a given period,Tp. (hours).

MEAN DOWN TIME (MDT). The average downtime caused by preventative and corrective maintenance, including any logistics delay time. This is synonymous with mean time to restore system (MTTRS) as found in some publications

MEAN TIME BETWEEN FAILURES (MTBF). The mean exposure time between consecutive failures of a component. MTBF is a require measurement used for calculating inherent availability. It can be estimated by dividing the exposure time by the number of failures in that period.

MEAN TIME BETWEEN MAINTENANCE (MTBM). The average time between all maintenance events that cause downtime, both preventative and corrective maintenance, and also includes any associated logistics delay time.

MEAN TIME TO MAINTAIN (MTTM). The average downtime for preventative maintenance. This includes any logistics delay time.

MEAN TIME TO REPAIR (MTTR). The mean time to replace or repair a failed component. Logistics delay time associated with the repair, such as parts acquisitions, crew mobilization, are not included. It can be estimated by dividing the summation of repair times by the number of repairs and, therefore, is practically the average repair time. The most common unit in reliability analyses is hours

-P-

PREVENTATIVE MAINTENANCE (PM): All actions performed in an attempt to retain an item in a specified condition. These actions may or may not result in downtime for the component, and may or may not be performed on a fixed interval

-R-

RELIABILITY (R(t)). The probability that a component can perform its intended function for a specified time interval (t) under stated conditions. This calculation is based on the exponential distribution.

REPAIR DOWNTIME (Rdt). The total downtime for corrective maintenance (excluding logistics delay time) for a given Tp. (hours).

REPAIR LOGISTICS TIME (Rlt). The total logistics delay time for corrective maintenance for a given Tp. (hours).

-T-

TOTAL DOWNTIME EVENTS (Tde): The total number of downtime events (including scheduled maintenance and failures) during the Tp.

TOTAL FAILURES (Tf). The total number of failures during the Tp.

TOTAL PERIOD (Tp). The calendar time over which data for the item was collected.

TOTAL MAINTENANCE ACTIONS (Tma). The total number of preventative maintenance actions which take the component down during the Tp.

-Y-

YEAR (y): The unit of time measurement approximately equal to 8765.81277 hours (h). Any rounding of this value will have adverse effects on analyses depending on the magnitude of that rounding. 8766 is used commonly as it is the result of rounding to 365.25×24 (which accounts for a leap year every 4th year). 8760, which is 365×24, is the most commonly used value in the power reliability field. By convention, 8760 will be used throughout this document